

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

DRAFT STAFF REPORT FOR REGULAR MEETING OF SEPTEMBER 11, 2009

Prepared on June 9, 2009

ITEM NUMBER: XX

SUBJECT: Master Reclamation Requirements Order No. R3-2009-0032 for Natural Selection Foods Inc., DBA Earthbound Farm Treatment and Reclamation Facility, San Benito County

KEY INFORMATION

Discharger:	Natural Selection Foods Inc., DBA Earthbound Farm
Location:	1721 San Juan Highway, San Benito, CA 95045, San Benito County
Type of Treatment:	Three treatment systems: 1) Activated sludge (secondary treatment), 2) disinfected secondary treatment, and 3) disinfected tertiary treatment.
Discharge Type:	Undisinfected secondary treated wastewater to percolation ponds. Disinfected secondary and tertiary recycled water to use areas and storage reservoirs.
Recycling:	As allowed under Title 22 for disinfected secondary and disinfected tertiary.
Design Flow:	Undisinfected secondary treatment = 0.70 million gallons per day (MGD) Disinfected secondary treatment = 0.18 MGD Disinfected tertiary treatment = 0.18 MGD
Projected Actual Flow:	0.42 to 0.67 MGD (range of daily flow rate for the food processing season from April through November in 2008). Approximately 0.17 MGD is discharged during the off-season (December through March).
Current Disposal Capacity:	<u>Undisinfected Secondary Treatment:</u> 0.50 MGD secondary treated wastewater to percolation Ponds 1, 2, and 3. <u>Reclaimed Water:</u> Up to 0.20 MGD disinfected secondary or tertiary treated wastewater for Discharger's landscape irrigation. Other potential users include, but not limited to, McAlpine Lake, San Benito Water District, and Steven's Creek Quarry. These entities are not authorized to accept or use the reclaimed water from the Discharger's facility under this Order.
Existing Orders:	Waste Discharge Requirements R3-2004-0066
This Action:	Adopt Master Reclamation Requirements Order No. R3-2009-0032

SUMMARY

On October 22, 1999, the Regional Board adopted Waste Discharge Requirements (WDR) Order No. 99-99 to regulate food processing wastewater discharge and domestic wastewater from the Natural Selection Foods, Inc., DBA Earthbound Farm (hereafter, "Discharger") facility in San Benito County. On July 10, 2006, the Discharger submitted a Notice of Intent (NOI) to comply with the



Central Coast Region General Waste Discharge Requirements for Discharges of Fruit and Vegetable Processing Waste, Order No. R3-2004-0066. The Water Board rescinded Order 99-99 and enrolled the Discharger into Order No. R3-2006-0066 on July 6, 2007. The Discharger submitted a Report of Waste Discharge on March 14, 2009, as an application for a Master Reclamation Requirements (MRR) permit due to their upgraded treatment system. The upgraded treatment system can produce up to 0.20 million gallons per day (MGD) of disinfected secondary and tertiary recycled water. The Report of Waste Discharge presents food process wastewater treatment, reclamation, and distribution improvements that provide for water recycling.

California Water Code Section 13510 states that the people of the State have a primary interest in the development of facilities to recycle water containing waste, to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the State. California Water Code Section 13512 states that it is the intention of the legislature that the State undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water demands of the State.

The Discharger's new wastewater treatment system will increase the quality of the site's effluent. It will also change the disposal method for treated. Wastewater that is currently disposed of by percolation will slowly increase in volume to a recycled water source. develop disposal for agricultural and urban irrigation. A select number of established water users will use the recycled water under a separate permit adopted by the Water Board. The Discharger requested a California Water Code §13523.1 master reclamation permit. This Order proposes such a permit.

DISCUSSION

The Discharger produces ready-to-eat, organic, spring mix salads, and apples at the San Benito County facility. Product varieties are mixed, washed in filtered re-circulated water, dried utilizing centrifugal dryers, weighed, and packaged into sealed bags or plastic trays. Facility-generated

wastewater comes from two processes within the Discharger's facility: wash water removed through the centrifugal drying process and wastewater generated through the sanitation process. The wastewater contains chlorine and citric acid that is added for disinfection of the fruits, vegetables, equipment, and floors.

The Water Board subsequently rescinded the Discharger's waste discharge requirements (WDR) Order No. 99-99 and enrolled the Discharger under the General Waste Discharge Requirements for Discharges of Fruit and Vegetable Processing Waste on July 6, 2007.

The majority of the processing season is between April and November. During the processing season, the facility operates on three 8-hour shifts. Process wastewater flow 30-day average is approximately 0.317 MGD with a peak daily flow of 0.667 MGD (2008 operating season data). During the off-season (December through March), a single shift of vegetable processing and equipment wash-down will generate approximately 0.17 MGD. Process flows are treated through fine screen for particle removal, followed by a sequencing batch reactor (activated sludge treatment). A portion of the wastewater is further treated through disinfection and sand filtering (tertiary treatment). The Discharger either disposes treated wastewater to 15 acres of percolation ponds or reclaims it for allowed uses.

Table 1 below presents concentration data for select process wastewater constituents.

TABLE 1 – NATURAL SELECTION FOODS' FACILITY EFFLUENT CHARACTERISTICS

CONSTITUENT (mg/L) / YEAR SAMPLED	Sept/Oct 2006	Oct 2007	Oct 2008	CA DPH MCLs¹
TDS (fixed) ²	1,244	1,077	1,243	500
Chloride	208	194	234	250
Sodium	220	246	280	--
Nitrite (as N)	0.3	< 0.1	< 0.1	1
Nitrate (as N)	45.7	1.7	1.7	45
Total Nitrogen	166.6	7.3	7.4	--
pH	7.85	7.26	7.58	--
BOD	178	103	191	--
TTHM	--	3.50	4.37	0.08
THA	--	3.80	2.30	0.06

Notes:

1. California Department of Public Health, Maximum Contaminant Levels for Drinking Water
2. TDS (fixed) is a measure of only the mass of mineral salts and fine mineral colloids from the original wastewater sample. The remaining sodium and potassium bicarbonate in the original TDS wastewater sample are lost to water vapor and carbon dioxide as they are converted to carbonates.

Table 2 below presents constituent concentration data for groundwater surrounding the percolation ponds.

TABLE 2 – GROUNDWATER CHARACTERISTICS SURROUNDING NATURAL SELECTION FOODS' PERCOLATION PONDS

CONSTITUENT (mg/L) / YEAR SAMPLED	Oct 2007 (prior to discharge)		Oct 2008		CA DPH MCLs
	Upgradient	Downgradient	Upgradient	Downgradient	
TDS (fixed)	1,193	1,997	2,870	1,027	500
Chloride	204	190	385	184	250
Sodium	397	268	793	213	--
Nitrate (as N)	58.1	7.8	73.7	1.0	45
pH	8.02	7.76	7.33	7.12	--
BOD	4	4	4	5	--
TTHM	<0.001	<0.001	0.001	0.002	0.08
THA	<0.006	<0.006	0.013	<0.006	0.06

The Discharger's October 2008 monitoring data indicate elevated concentrations of total trihalomethanes (TTHM) in the downgradient groundwater as compared to groundwater samples collected and analyzed in October 2007 (prior to discharge). This is expected due to the addition of sodium hypochlorite used for produce and facility disinfection. The Discharger is currently assessing alternative disinfection methods to address the high levels of TTHMs in their effluent..

Compliance History

The Water Board approved Administrative Civil Liability Complaint No. R3-2007-0015 (ACL – August 23, 2007) for the Discharger's lack of monitoring, reporting, and an illegal discharge into San Juan Creek, an adjacent surface water body.

Water Recycling -- Regulatory Considerations

Water Code

The California Water Code (Porter-Cologne) provides the Water Board authority to regulate water recycling in order to protect water quality. Relevant water recycling regulations are as follows:

California Water Code Section	Language
13576(e)	The use of recycled water has proven to be safe from a public health standpoint and that the State Department of Public Health is updating regulations for the use of recycled water.
13510	The people of the state have a primary interest in the development of facilities to recycle water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state.
13512	It is the intention of the legislature that the State undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water demands of the State.
13523.1	Provides that (a) Each regional board, after consulting with, and receiving the recommendations of, the California Department of Public Health and any party who has requested in writing to be consulted, with the consent of the proposed

California Water Code Section	Language
	<p>permittee, and after any necessary hearing, may, in lieu of issuing waste discharge requirements pursuant to Section 13263 or water reclamation requirements pursuant to Section 13523 for a user of reclaimed water, issue a master reclamation permit to a supplier or distributor, or both, of reclaimed water. A master reclamation permit shall include, at least, all of the following:</p> <ol style="list-style-type: none"> 1. Waste discharge requirements, adopted pursuant to Article 4 (commencing with Section 13260) of Chapter 4. 2. A requirement that the permittee comply with the uniform statewide reclamation criteria established pursuant to Section 13521. Permit conditions for a use of reclaimed water not addressed by the uniform statewide water reclamation criteria shall be considered on a case-by- case basis. 3. A requirement that the permittee establish and enforce rules or regulations for reclaimed water users, governing the design and construction of reclaimed water use facilities and the use of reclaimed water, in accordance with the uniform statewide reclamation criteria established pursuant to Section 13521. 4. A requirement that the permittee submit a quarterly report summarizing reclaimed water use, including the total amount of reclaimed water supplied, the total number of reclaimed water use sites, and the locations of those sites, including the names of the hydrologic areas underlying the reclaimed water use sites. 5. A requirement that the permittee conduct periodic inspections of the facilities of the reclaimed water users to monitor compliance by the users with the uniform statewide reclamation criteria established pursuant to Section 13521 and the requirements of the master reclamation permit. 6. Any other requirements determined to be appropriate by the regional board after the regional water board issues a master reclamation permit. Section 13522.5(e) exempts any such user of recycled water from the requirement to file a report with a regional water board related to any material change in the character of the recycled water or its use, except when requested by the regional water board.

State Water Board and DPH MOA

On February 20, 1996, a Memorandum of Agreement (MOA) was executed between the California Department of Public Health (DPH) and the State Water Resources Control Board (State Water Board), on behalf of the State Water Board and nine California Regional Water Quality Control Boards. The MOA allocates primary areas of responsibility and authority between these agencies. The MOA provides methods and mechanisms necessary to ensure ongoing and continuous future coordination of activities relative to the use of recycled water in California. Regulation of the Discharger's recycled water does not require oversight and regulation by the DPH due to the nature of the recycled water is not from a domestic wastewater source, although Water Board staff references Title 22 and 17 of the California Code of Regulations in this Order for the appropriate use of the recycled water in order to protect the beneficial uses of water bodies and the general protection of human health.

Wastewater Disposal -- Regulatory Considerations

The Water Board regulates wastewater discharges under California Water Code authority, according to the Water Quality Control Plan for the Central Coast Basin (Basin Plan).

Basin Plan

The Basin Plan designates the existing and anticipated beneficial uses of the Gilroy-Hollister Valley, San Juan Bautista groundwater sub-basin underlying the land disposal discharge areas to include:

- a. Municipal and Domestic Water Supply
- b. Agricultural Water Supply

The San Benito River is the closest surface water body to the Discharger's facility disposal and reuse areas. The Basin Plan designates existing and anticipated beneficial uses of the San Benito River along the reach adjacent to the Discharger's facility disposal area that could be affected by the discharge to include:

- a. Municipal and Domestic Supply
- b. Agricultural Water Supply
- c. Industrial Service Supply
- d. Groundwater Recharge
- e. Water Contact Recreation
- f. Non-Contact Water Recreation
- g. Wildlife Habitat
- h. Warm Freshwater Habitat
- i. Spawning, Reproduction, and/or Early Development
- j. Freshwater Replenishment
- k. Commercial and Sport Fishing.

This Order implements the Basin Plan's water quality objectives for both groundwater and surface water bodies.

The Basin Plan specifies water quality objectives for certain surface waters, which are intended to serve as a baseline for evaluating water quality management in the basin. The objectives are, at best, representative of gross areas only, and are based on preservation of existing water quality or water quality enhancement believed attainable following control of point sources. Water quality objectives for the San Benito River are as follows:

Surface Water Quality Objectives for the San Benito River

Parameter	Concentration (mg/L)
Total Dissolved Solids (TDS)	1400
Chloride (Cl)	200
Sulfate	350
Boron	1.0
Sodium	250

Excerpted from Table 3-7, page III-13 of the Basin Plan

Municipal and domestic water supply beneficial use designations are applied to receiving waters in accordance with the provisions of State Water Resources Control Board Resolution No. 88-63. Resolution 88-63 designates all surface and groundwater within the State as suitable or potentially suitable for municipal or domestic supply except where:

- TDS exceeds 3,000 mg/L (5,000 uS/cm electrical conductivity)
- Contamination exists that cannot reasonably be treated for domestic use, or
- The source is not sufficient to supply an average sustained yield of 200 gallons per day.

Pursuant to Resolution 88-63, the Basin Plan designates all groundwater throughout the Central Coast Basin, except for that found in the Soda Lake Sub-basin, suitable for agricultural supply, municipal and domestic water supply, and industrial use.

Numeric inorganic constituent guidelines and water quality objectives for agricultural supply beneficial use are listed in Basin Plan Tables 3-3 and 3-4 on pages III-8 and III-9, respectively.

Section II.A.4. (Objectives for Groundwater) of the Basin Plan contains both narrative and numeric groundwater quality objectives for the protection of municipal and domestic water supply beneficial uses. The numeric water quality objectives include primary and secondary Maximum Contaminant Levels (MCLs) for drinking water supply.

The MCLs for various constituents are set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.

The narrative groundwater objectives found on page III-14 of the Basin Plan state: "Groundwater shall not contain taste or odor producing substances at concentrations that adversely affect beneficial uses." The Department of Public Health has established secondary MCLs for certain substances that will cause adverse taste and/or odor in drinking water. Secondary MCLs are generally presented as recommended, upper, and short-term water supply limits based on consumer acceptance levels. "Recommended" concentrations are desirable for a higher degree of consumer acceptance. "Upper" concentrations are acceptable if it is neither reasonable nor feasible to provide more suitable waters for supply. "Short-term" concentrations are acceptable only for existing systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.

There are no narrative or numeric water quality objectives specific to the protection of the industrial supply beneficial use in the Basin Plan. Acceptable constituent levels for industrial use vary significantly from one industry to the next. For example, excessive salinity in industrial supply waters may impair beneficial use through such factors as scaling and corrosion or elevated salt concentrations for food processing industries. Certain industries may require extremely low salinity levels only achievable through pretreatment prior to use, even in cases where supply water has low salinity in comparison to other standards. In general protection of agricultural, municipal and domestic supply beneficial uses will be reasonably protective of most industrial uses.

Anti-Degradation

When issuing WDRs and MRRs, the Water Board must consider State Water Board Resolution 68-16. State Water Board Resolution No. 68-16 – “Statement of Policy With Respect to Maintaining High Quality of Waters in California” requires that the Water Board, in regulating the discharge of waste, to maintain high quality waters of the state (i.e., background water quality) unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Water Board’s policies (e.g., quality that exceeds water quality objectives). Resolution 68-16 requires that any discharge to existing high quality water be required to meet waste discharge requirements which will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.

The application of disinfected tertiary recycled water to appropriately sited, designed and managed reuse areas as authorized by this Order will not cause degradation of receiving waters, including San Benito River and groundwater. This permit requires that recycled water meeting California Code of Regulations Title 22 criteria for disinfected tertiary recycled water be applied to applicable reuse areas at times and rates which do not result in surface runoff and minimize the leaching of water, nutrients, and minerals to groundwater. In addition, this Order requires elimination of waste constituents at concentrations that exceed Basin Plan water quality objectives or background conditions in the groundwater basin or that exceed the assimilative capacity of the groundwater basin.

The reclamation project directly and incidentally provides a net environmental benefit by minimizing potable water supply usage that the Discharger would otherwise utilize for routine landscape irrigation.

Total Maximum Daily Loads

Section 303(d) of the Clean Water Act requires states to identify and prepare lists of water bodies that do not meet water quality standards and to establish Total Maximum Daily Loads (TMDL) for listed water bodies. The San Benito River and several of its tributaries are on the Clean Water Act Section 303(d) list as impaired due to elevated concentrations of sediment and fecal coliform. The US Environmental Protection Agency approved the Pajaro River (including San Benito River) Sediment TMDL on May 3, 2007. Water Board staff continue to develop waste load and load allocations for sources of fecal coliform entering the San Benito River, as well as other water bodies within the Pajaro River watershed. The Water Board may modify requirements described in this Order to meet the allocations described in current and future TMDLs if the Water Board determines that discharges from the Discharger’s facility are causing or contributing to water quality impairment.

Discussion Summary

The Discharger upgraded the food process wash-water treatment system in 2007 from a simple screening and spray disposal treatment system to an activated sludge (sequencing batch reactor - SBR) treatment facility. The Discharger disposes of the secondary treated process wash-water to percolation ponds, which can accept up to 0.48 million gallons per day (MGD) of treated process wash-water.

The Discharger submitted a *Report of Waste Discharge* on March 14, 2009, as an application for a Master Reclamation Requirements (MRR) permit to recycle water from their upgraded treatment system. The upgraded treatment system can produce up to 0.20 MGD of disinfected secondary and tertiary recycled water. The *Report of Waste Discharge* presents food process wastewater treatment, reclamation, and distribution improvements that provide for water recycling. Specifically, the Discharger upgraded the activated sludge treatment system to include sand filtration, chlorine disinfection, and an effluent storage pond. The Discharger's newest wastewater treatment system components include:

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|--|---|
| a. Primary and secondary dechlorination chemical feed pump | r. Water level transmitters |
| b. Fine gravity screen | s. Dissolved oxygen and suspended solids analyzers |
| c. Polyethylene lined Flow Equalization and Emergency Storage Pond (575,000 gallon capacity) | t. Filter effluent pump and flow meter |
| d. Influent lift pump and flow meter | u. Influent and effluent turbidity meters |
| e. Programmable Logic Controller | v. Polymer feed pump |
| f. Influent and tertiary effluent chlorine residual analyzers | w. Chlorine contact tanks (4 in series) and chlorine feed pumps |
| g. Submersible mixing pumps | x. Pressure Filter Subsystem |
| h. Surface mixers (2) | y. Filter backwash flow meter and pump |
| i. Aerators (9) | z. Static mixers (3) |
| j. Decanter | aa. Biological process basins (700,000 gallon capacity – divided into 2 cells by a floating baffle) |
| k. Wasting and Return pumps | bb. Plant water and irrigation pump |
| l. Sludge Storage Pond (575,000 gallon capacity) | cc. Tertiary effluent chlorine residual sampling pump |
| m. Secondary Effluent Pond (160,000 gallon capacity) | dd. Automatic dialer |
| n. Secondary and tertiary effluent pump | ee. Tertiary effluent flow meter |
| o. Irrigation Booster pump | ff. Tertiary effluent storage pond (261,000 gallon capacity) |
| p. Secondary effluent flow meters (3) | gg. Chemical feed and storage building |
| q. Chemical level sensors | |

The proposed Order sets requirements for industrial wastewater recycling and disposal, and incorporates relevant regulations, plans, and guidelines to protect water quality and public health. This staff report discusses the relevant regulations, plans, and guidelines as they relate to the specific needs of the recycled water users. If the Water Board regulates the discharge under individual Order R3-2009-0032, the General WDRs would not be necessary, and therefore Order No. R3-2009-0032 rescinds the Dischargers enrollment in the General Waste Discharge Requirements for Discharges of Fruit and Vegetable Processing Waste, Order No. R3-2004-0066.

ENVIRONMENTAL SUMMARY

The San Benito County Planning Department adopted a Mitigated Negative Declaration in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) and the California Code of Regulations (Section 15070 et seq.) in September 2007, for the Natural Selection Foods Use Permit No. 969-07 and Grading Permit No. 07-380. The San Benito County Planning Department determined the Discharger's wastewater treatment facility upgrade will have no significant environmental effects and that all potentially significant adverse effects can be avoided through implementation of mitigation measures. Mitigation measures to prevent nuisance and ensure protection of beneficial uses of surface water and groundwater will be implemented through this Order.

COMMENTS & RESPONSES

INSERT COMMENTS HERE.

RECOMMENDATION

Adopt Order No. R3-2009-0032 as proposed.

ATTACHMENTS

- A. Master Reclamation Requirements Order No. R3-2009-0032
- B. Monitoring and Reporting Program Requirements Order No. R3-2009-0032
- C. Comments and Responses

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